

**REMARKS**

A total of 21 claims remain in the present application. The foregoing amendments are presented in response to the Office Action mailed September 19, 2007, wherefore reconsideration is respectfully requested. By way of the foregoing amendments, independent claims 1, 11 and 19 have been amended to define that the optimal route is subject to at least one serial restriction constraint; "a respective serial restriction group identifies] nodes of the weighted graph that are subject to each subset sequence constraint" and that the "at least one subset sequence constraint includes a strong constraint in which a path cannot allowably extend through any two pairs of consecutive nodes in the serial restriction group". Dependent claims 2, 5, 12, 14, 20 and 21 have been amended to reflect the revisions effected in claims 1, 11 and 19. Finally, paragraphs 6-10 of the specification has been amended to more clearly define the nature of subset sequence constraints of the type addressed by the present invention.

In preparing the above-noted amendments, careful attention was paid to ensure that no new subject matter has been introduced. Support for the above-noted definition of the strong constraint can be found throughout the specification, including, for example, paragraphs 6-10 and 36-39.

Referring now to the text of the Office Action, claims 1-21 stand rejected under 35 U.S.C. § 103(a), as being unpatentable over the teaching of United States Patent Application Publication No. 2002/0059025 (Kim et al.);

The foregoing claim rejections are believed to be traversed by way of the above-noted claim amendments, and further in view of the following discussion.

As noted above, independent claims 1, 11 and 19 have been amended to define that "the at least one subset sequence constraint includes a strong constraint in which a path cannot allowably extend through any two pairs of consecutive nodes in the serial restriction group". Kim et al do not teach or fairly suggest this limitation.

In particular, Kim et al teach a method for finding a shortest path from a starting place to a destination place in a traffic network including turn restrictions, U-turns and P-turns using

Dijkstra algorithm or Floyd-Warshall algorithm. {Abstract} “As shown in FIG. 3, each value between nodes represents a travel time value from one node to the other node and the traffic network includes two turn-restriction paths including a path 310 along nodes 6-5-8 and a path 311 along nodes 3-4-7. It is possible for a driver to do a U-turn along nodes 6-5-2-5-8 in order to travel from a node 6 to a node 8 and a U-turn along nodes 3-4-1-4-7 in order to travel from a node 3 to a node 7.” [Kim et al., Para 40]

Kim et al, explicitly teaches that the turn restriction 310 can be avoided by making a detour (U-turn) to node 2. Thus, according to Kim et al, the path 6-5-8 traversing links 6-5 and 5-8, in succession is not allowable (due to the turn restriction), but the path 6-5-2-5-8 traversing links 6-5; 5-2; 2-5; 5-8, in succession, is allowable. However, this solution is explicitly forbidden by the strong constraint defined in the present claims.

In the terms of the present invention, the turn restriction 310 would properly be represented by a serial restriction group identifying nodes 5, 6 and 8, since these are the nodes subject to the turn restriction. However, according to the strong constraint “a path cannot allowably extend through any two pairs of consecutive nodes in the serial restriction group”, The strong constraint means, for example, that a path could allowably extend through either one of links 6-5 and 5-8, but not both. Accordingly, Kim et al’s path 6-5-2-5-8 traversing links 6-5; 5-2; 2-5; 5-8, in succession will fail the strong constraint, because it extends through both of the links 6-5 and 5-8. Kim et al do not teach or fairly suggest a solution to this problem.

In light of the foregoing, it is believed that Kim et al fails to teach or fairly suggest the limitations of the presently claimed invention. Reconsideration and withdrawal of the claim rejections under 35 U.S.C. § 103(a) are therefore believed to be in order.

Thus it is further believed that the present application is in condition for allowance,  
and early action in that respect is courteously solicited.

Respectfully submitted,

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